

Task 5

Creating a pandas dataframe from the different data shapes/sizes which will help us decide which value we should take in order to resize our images.

Step 1:

Import necessary libraries i.e. nibabel, numpy, glob and pandas

If you don't have pandas installed then just type the command **pip install pandas** from the terminal.

Step 2:

Define a variable named **img_fldr** which directs to the folder containing all your images.

Use the **glob** command to get all the image paths.

Define an empty list named **datas** to hold all of your image metadata

Step 3:

Loop through all the images doing the following operations for each image:

1. Load image
2. Get image data
3. Get data shape
4. Append the data shape to the **datas** list

Step 4:

After you have the **datas** list with all your image information, Create a pandas dataframe with it and define the three column names as **Xsize**, **Ysize** and **Zsize**.

Finally, use the **describe** command of pandas to get information like **mean**, **standard deviation**, **minimum** and **maximum** values of the image sizes.

Skeleton of the code: modify it

```
# Step 1

import nibabel as nib
import numpy as np
import glob
import pandas as pd

# step 2

img_fldr = '' # modify here
files = glob.glob(img_fldr + "*.gz")

datas = []

# Step 3

for filePath in files:
    # Load image, use the load function
    # get data from image, use the get_fdata function
    # get size of the image. use the shape function
    # append the data to the array named datas. use the append(...) function

# Step 4

df = pd.DataFrame(datas, columns = ['Xsize','Ysize','Zsize'])
df.describe()
```